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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Joong- Hyun Mun

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3599

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12/28/2004

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EXAMINER

DI GRAZIO, JEANNE A

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/970,994

Applicant(s)

MUN ET AL.

Examiner

Jeanne A. Di Grazio

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2871

*Handwritten signature*

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on RCE 7 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 8 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9 August 2004 has been entered.

### ***Claim Objections***

Claim 1 is objected to because of the following informalities:

As to claim 1, Applicant recites that the common electrode has a first aperture pattern and the pixel electrode has a second aperture pattern. Applicant then recites that it is the first and the second aperture pattern that divide the pixel region into a plurality of domains. These recitations taken together render the claim unclear. The claim is rendered unclear because it is not clear from the claim whether it is the first and second aperture pattern collectively of the common and pixel electrodes that create the multi-domain effect or whether the pixel electrode itself has another aperture pattern that in conjunction with the second aperture pattern confers the multi-domain effect.

For examination purposes, the examiner reads said recitations in light of the prior art of record. The recitation is interpreted to mean that the spacer is located at the end portion of any aperture (either the common electrode or the pixel electrode or both electrodes).

Appropriate correction is **required**.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 6,473,142 B2 (to Kim et al.).

As to claim 1, Kim teaches and discloses a multi-domain liquid crystal display device. Kim teaches and shows, with reference to conventional art Figure 1, a pixel unit of a conventional LCD. Figure 1 teaches and discloses first and second substrates opposing each other (the substrates are not numbered), a pixel electrode (13) formed on the first substrate and having openings (Applicant's "a first aperture pattern"), a common electrode (17) formed on the second substrate and having open areas (Applicant's "a second aperture pattern") and a spacer

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(51) that is provided between the first and second substrates for maintaining a predetermined gap between the first and second substrates. Figure 1 also includes liquid crystal material (not numbered) between the first and second substrates.

It can be seen in Figure 1, that the spacer is located within the open areas of the common electrode.

Kim Figure 1 does not appear to explicitly specify or illustrate the spacer disposed at an end portion of the open area(s).

With reference to Figures 7 and 8 (by way of non-limiting example) a pixel region (13) is divided into a plurality of domains by a dielectric frame (57). Although not clearly seen in Figures 2a and 2b, the common electrode (17) includes an electric field inducing window (43) formed as a slit or hole in the common electrode (Column 4, Lines 39-45). As may be seen in Figure 4C, the dielectric frame (57) is formed at an end of the electric field inducing window (43).

Kim's invention is directed at providing a wide viewing angle and high brightness by a stable arrangement of liquid crystal molecules (Column 2, Lines 1-4).

Kim is evidence that ordinary workers in the field of liquid crystals would have found the reason, suggestion and motivation to combine embodiments of Kim for a wide viewing angle display of high brightness by a stable arrangement of liquid crystal molecules.

Therefore it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to combine teachings of Kim for a wide viewing angle display of high brightness by a stable arrangement of liquid crystal molecules.

*Allowable Subject Matter*

Claims 2-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Claims 2-6 have previously been allowed per Office Action of June 19, 2003.**

As to claims 2-6, relevant prior art of record did not disclose, alone or in combination, Applicant's recited geometries of the pixel electrodes as claimed.

Claims 7 and 8 are allowed.

**Claims 7 and 8 have previously been allowed per Office Action of June 19, 2003.**

As to claims 7 and 8, relevant prior art of record did not disclose, alone or in combination, the specified apertures and branch geometries of the pixel and common electrodes as recited by Applicant. Relevant art, United States Patent (US 6,567,144 B1) discloses saw-toothed shaped protrusions on pixel and common electrodes; however, Applicant's recited elements do not appear to be disclosed by said reference.

It is further noted that, said reference is disqualified as commonly owned by assignee Samsung Electronics, Inc.

***Response to Arguments***

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

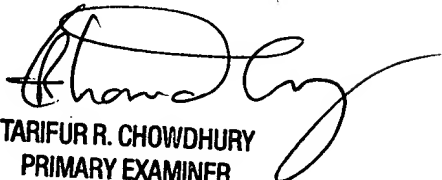
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (571)272-2289. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeanne Andrea Di Grazio  
Patent Examiner  
Art Unit 2871

JDG

  
TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER